

201-14215A

U.S. EPA HIGH PRODUCTION VOLUME
CHEMICAL VOLUNTARY TESTING PROGRAM

TEST PLAN

2-ETHYLHEXYL DIPHENYL PHOSPHATE

Submitted by:

FERRO CORPORATION
CLEVELAND, OHIO

December 2002

INTRODUCTION

2-Ethylhexyl diphenyl phosphate, CAS Registry Number 1241-94-7, is a general purpose plasticizer for most commercial resins including polyvinyl chloride and its copolymers, cellulose nitrate, cellulose acetate-butyrate, ethyl cellulose, polymethyl methacrylate and polystyrene. 2-Ethylhexyl diphenyl phosphate (EDP) is approved for indirect food contact. EDP is a clear, odorless liquid with the following physical properties:

Boiling point 239 C (463°F)
Vapor pressure 0.195 kPa @ 150° C
Volatility 2.5% w/w ASTM D-2369
Viscosity 16.4 mPa @ 25°C
Solubility 0.31 mg/L @ 25°C.

TEST PLAN RATIONALE

At this time, information available on the environmental effects, ecotoxicity and health effects of 2-ethylhexyl diphenyl phosphate cannot be documented or is judged to be not reliable according to the standards specified by Klimisch (Regulatory Toxicology and Pharmacology, 25, 1-5, 1997) or the EPA High Production Volume Challenge Program Guidelines for Determining the Adequacy of Existing Data (<http://www.epa.gov/chemrtk/datadfin.htm>). The exception to this is acute oral toxicity for which there is adequate data to satisfy this HPV Endpoint. A summary of those rodent oral data are included as Appendix 1 to this submission. Accordingly, Ferro Corporation commits to generating data, listed in Table 1, necessary to meet address HPV Endpoints.

Ferro Corporation is committed to providing EPA with reliable data necessary to complete the SIDS screening matrix for the HPV voluntary challenge; however, Ferro Corporation is also committed to judicious use of research animal resources. To this end Ferro Corporation will continue to attempt to obtain adequate documentation on existing studies of 2-ethylhexyl diphenyl phosphate. To the extent that this documentation becomes available to Ferro, the HPV Test Plan submitted herein may be altered to reflect reliance on existing studies.

TEST PLAN: 2-ETHYLHEXYL DIPHENYL PHOSPHATE

Table 1 lists the HPV testing planned by Ferro Corporation for 2-ethylhexyl diphenyl phosphate.

Table 1: 2-ETHYLHEXYL DIPHENYL PHOSPHATE HPV TEST PLAN

HPV DATA ENDPOINT	PROPOSED DATA DEVELOPMENT METHOD
1. CHEMISTRY	
Melting Point	OECD Test Guideline 102
Boiling Point	OECD Test Guideline 103
Vapor Pressure	OECD Test Guideline 104
Water Solubility	OECD Test Guideline 105
Partition Co- Efficient	OECD Test Guideline 107
2. ENVIRON- MENTAL FATE	
Photodegradation	Estimate/model
Hydrolysis (Stability in Water)	OECD Test Guideline 111
Biodegradation	OECD Test Guideline 301
Fugacity	Fugacity Level III Modeling
3. HEALTH EFFECTS	
Acute Toxicity	Information Available – No testing proposed
Repeat Dose Toxicity	Combined Repeat-Dose Toxicity Study with Reproductive/ Developmental Toxicity Screen: OECD Health Effects Test Guideline 422
Repro-Develop. Toxicity	
Genetic Toxicity	Bacterial Mutation Test: OECD Health Effects Test Guideline 471 Mammalian Erythrocyte Micronucleus Test: OECD Health Effects Test Guideline 474
4. ECOTOXICITY	
Fish	Acute Toxicity to Fish: OECD Test Guideline 203
Daphnia	Acute Toxicity to Aquatic Invertebrates: OECD Test Guideline 202
Algae	Acute Toxicity to Aquatic Plants (Algae): OECD Test Guideline 201